

USSR

UDC 621.314.14(088.8)

MALEYEV, N. K., SOLOV'YEV, V. P. [Gos. proektirovaniye. In-t po proyektir. Signaliz., tsentraliz. svyazi i radio na zh.-d transp.--State Planning-Research Institute for Planning of Signaling, and Centralization of Communication and Radio on Railroad Transportation]

"Inverter"

USSR Author's Certificate No 251076, Filed 30 May 66, Published 19 Feb 70 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10B364P)

Translation: In the proposed circuit for an inverter of d-c voltage to a-c, two series-connected transistors are used in each branch of the final stage. With the object of a uniform distribution of the potentials at the transistors in a regime of cutoff and saturation, capacitors connected in series among themselves are used. Two capacitors are connected in parallel with the collector-base regions of two transistors and another two connected between the bases of the above-mentioned transistors and the emitters of transistors connected to a plus power supply. Use of capacitance compensating dividers instead of resistance makes it possible to increase the reliability of the transistors and to eliminate their output from the system, which accounts for the more uniform distribution of the potentials.

1 ill. V. Sh.

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MALEYEV, N. S.

SOV. JPRS 53272

02 Jun 71

UDC: 616-07-71:681.31

PROSPECTS OF USING ELECTRONIC COMPUTERS IN MEDICAL DIAGNOSTICS

Article by N. K. Vrenel, Ts. D. Kardashev, N. S. Maleyev (Sofiya); Moscow, Vostochno-Aziatskiy Meditsinskiy Nauch. SSSR, Russian, No 4, April 1971, pp 60-64.

Making a diagnosis is a typical process of information processing that can arbitrarily be divided into three parts: 1) gathering information characterizing the patient's condition; 2) processing and evaluating it; 3) making a decision on the basis of the information obtained (N. H. Amosov, M. L. Bykhovskiy et al.).

The accuracy of the diagnosis made is determined by the fullness and reliability of information about the patient's condition. In other words, this information should contain data about the presence as well as severity of specific pathological changes (symptoms) in the patient's organism at the time of the examination and at the earlier stages of development of the disease. The quantity of such symptoms can be arbitrarily great, since, in view of the complex interdependency of numerous vital processes, any deviation from normal inevitably leads to onset of a series of disturbances. In practice, it is impossible to take into consideration all of the pathological changes occurring in the organism as the result of some specific disease. Therefore in each concrete case a limited number of symptoms is picked out which are encountered the most often and which have the greatest diagnostic value. It is possible, one should do without data obtained as a result of traumatic, painful, and lengthy diagnostic procedures.

Historically, in the development of medical diagnostics, one can distinguish three qualitatively different stages.

At the first stage, there is a direct link between the doctor and the patient; they form one information dipole. The doctor's success at this stage is determined entirely by the conditioning of his sensory organs which are capable of fixing the presence of little noticeable pathological changes. At this stage, the diagnostic process suffers from a number of substantial flaws the most important of which are: a) the data about the patient's condition are superficial, subjective, and difficult to verify; b) the doctor's education and improvement of his knowledge constitute a

1/2 011 UNCLASSIFIED PROCESSING DATE-- 20NOV70
TITLE--UNITARITY CONDITIONS FOR THE MANY BODY SYSTEM AT ZERO TEMPERATURE
-U-
AUTHOR--(02)-GINZBURG, S.L., MALEYEV, S.V. *m*
COUNTRY OF INFO--USSR
SOURCE--TEKNETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 3, PP
420-434
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--GREEN FUNCTION, TEMPERATURE EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1248 STEP NO--UR/0646/70/003/003/0420/0434
CIRC ACCESSION NO--AP0124900

UNCLASSIFIED

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CIRC ACCESSION NO--AP0124900
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. THE UNITARITY RELATIONS FOR GREEN
FUNCTIONS AND VERTEX PARTS FOR THE CASE OF ZERO TEMPERATURE ARE DEDUCED
AND INVESTIGATED. THE PROBLEM WHETHER THE INTERMEDIATE STATES CAN BE
DESCRIBED BY MEANS OF QUASIPARTICLES IS DISCUSSED IN DETAIL.
FACILITY: FIZIKO-TEKHNICKESKIY INSTITUT IMENI A. F. IOFFE.
FACILITY: AKADEMII NAUK SSSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THE SINGLE PARTICLE APPROXIMATION AND ROLE OF MANY PARTICLE STATES
IN SCATTERING OF ELECTRONS BY A PARAMAGNETIC IMPURITY --U-
AUTHOR--MALEYEV, S.V.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 2031-2046
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ELECTRON SCATTERING, SCATTERING AMPLITUDE, THERMAL EMF,
THERMAL CONDUCTION, SPECIFIC HEAT, GREEN FUNCTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2222 STEP NO--UR/0056/T0/058/006/2031/2046
CIRC ACCESSION NO--AP0125801
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125801

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF SCATTERING OF A CONDUCTIVITY ELECTRON BY A PARAMAGNETIC IMPURITY (KONDO EFFECT) IS SOLVED BY TWO METHODS: BY DECOUPLING THE CHAIN OF THE EQUATION FOR THE GREEN FUNCTIONS (NAGAOKA) AND BY EXPLOITING THE ANALYTIC PROPERTIES OF THE SCATTERING AMPLITUDE AND THE UNITARITY CONDITIONS (SUHL, THE AUTHOR). BOTH METHODS HOWEVER HAVE NOT BEEN SUFFICIENTLY FOUNDED. THE PRESENT PAPER IS DEDICATED TO SUBSTANTIATION OF THE SECOND METHOD. THE ROLE OF MANY PARTICLE STATES UNDER UNITARITY CONDITIONS IS QUALITATIVELY INVESTIGATED IN THE FIRST PART AND IT IS SHOWN THAT THE ROLE MAINLY CONSISTS IN RENORMALIZATION OF THE KONDO ENERGY. IT IS ALSO DEMONSTRATED THAT FOR LARGE IMPURITY SPINS THE SCATTERING AMPLITUDE FOUND IN THE SINGLE PARTICLE APPROXIMATION IS THE MAJOR TERM IN THE EXPANSION OF THE AMPLITUDE IN INVERSE POWERS OF THE SPIN. THE DYNAMIC PROBLEM OF ELECTRON SCATTERING BY A PARAMAGNETIC IMPURITY IS SOLVED IN THE SECOND PART IN THE SINGLE PARTICLE APPROXIMATION, AND IT IS SHOWN THAT THE SINGLE PARTICLE SOLUTION PREVIOUSLY OBTAINED BY MEANS OF THE UNITARITY CONDITIONS IS CORRECT, I.E. THE PROBLEM OF THE SO CALLED CDD NONUNIQUENESS WAS CORRECTLY SOLVED. FROM THE RESULTS OBTAINED IN THE PAPER IT FOLLOWS, IN PARTICULAR, THAT THE ASYMPTOTIC FORMULAS PREVIOUSLY DERIVED BY THE SUHL METHOD FOR THE TEMPERATURE DEPENDENCE OF PHYSICAL QUANTITIES (RESISTANCE, THERMO E.M.F., THERMAL CONDUCTIVITY AND SPECIFIC HEAT) ARE CORRECT. FACILITY: FIZIKO-TEKHNICHESKIY IM. A. F. IOFFE AN SSSR.

UNCLASSIFIED

Acc. Nr: **AP0038042**

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 1, pp 199-210DEPOLARIZATION OF NEUTRONS PASSING
THROUGH A FERROMAGNETICS. V. Maleyev, V. A. Ruban

Depolarization of neutrons passing through a ferromagnetic sample in the saturated state is considered. The depolarization is caused by random magnetic fields produced by thermal motion of the atomic spins. In the most interesting case, when the neutron polarization is parallel to the external field, the depolarization is expressed in terms of the magnetization fluctuation correlator. It is shown that depolarization is determined by fluctuations averaged over the quantum indeterminacy of the neutron position in the beam; it thus strongly depends on the angular divergence of the beam and on its degree of monochromaticity. For a wide and nonmonochromatic beam the depolarization is proportional to the total cross section for inelastic magnetic scattering. Formulas for depolarization are derived on basis of spin wave theory and it is noted that an experimental study of depolarization should permit one to determine the main parameters of the theory. Depolarization in the critical region is discussed qualitatively.

BEEL/FRAME
19731085

19

GJS

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UDC 612.013.1.014.43.014.461

POKROVSKIY, V. I., BULYCHEV, V. V., LISYKOV, T. Ye., MALEYEV, V. V.,
UTKHHIN, V. A., CHERNAYEVA, T. Ye., MAYOROV, Yu. M., MILOVIDOVA, S. S., and
KAFAROV, K. A., Central Department of Infectious Pathology, Scientific Research
Institute of N. N. Pirogova, Institute of Epidemiology, Ministry of Health USSR,
and Chair of Hospital Therapy, Evening Faculty, Second Moscow Medical Institute,
and Chair of Hygiene, State Central Institute for Physical Culture

"Effect of Dehydration and Hyperthermia on Homeostasis in Healthy Persons"

Moscow, Sovetskaya Meditsina, No 2, 1973, pp 27-31

Abstract: Blood chemistry and cardiovascular changes were studied in 20 healthy males aged 18 to 32 before and after staying various lengths of time in a sauna bath (15 to 30 and 35 to 55 minutes of exposure to temperatures of 80 to 100° and humidity of 8%). In those who remained in the sauna 15 to 30 minutes, hyperthermia resulted in hyperfunction of the heart, slowing of the blood flow, elevation of the pH and pressure of venous blood, increase in serum proteins and in the specific gravity and viscosity of blood, decrease in clotting time, loss of chlorine and potassium. In the group that remained in the sauna over 35 minutes, dehydration caused a loss of electrolytes (chiefly chlorine and potassium) with urine, cardiac hypofunction, slowing of the blood

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POKROVSKIY, V. I., et al., Sovetskaya Meditsina, No 2, 1973, pp 27-31

flow, decrease in venous and arterial blood pressure, shortening of clotting time, and increase in blood proteins, specific gravity, viscosity, and pH. The biochemical changes in both groups were within physiological limits and had no lasting effects. These findings can be used to determine disruptions of homeostasis, evaluate alterations in water-salt metabolism, acid-base equilibrium, etc. in infectious patients, and assess the efficacy of therapy, particularly in gastrointestinal diseases.

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UDC 616.932-08-036.8:612.013.1

NIKIFOROV, V. N., POKROVSKIY, V. I., BULYCHEV, V. V., MALEYEV, V. V.,
KUPRIYCHUK, A. B., KUCHEROVA, T. P., BALASHEV, V. I., KOLYAKOVA, T. A.,
and VEYUR, N. A., Scientific Research Institute of Epidemiology, Ministry
of Health USSR

"Restoration of Homeostasis in Cholera Patients Receiving Rehydration Therapy"

Moscow, Sovetskaya Meditsina, No 9, 1971, pp 114-120

Abstract: Normalization of disturbances of homeostasis in cholera patients is achieved by careful monitoring of the effects of rehydration therapy. Various indices of homeostasis -- physicochemical properties of the blood, acid-base equilibrium of arterial and venous blood, clotting, etc. -- were investigated in 58 patients with Asiatic cholera before and during rehydration with the standard No 1 solution (5 g NaCl, 4 g NaHCO₃, and 1 g KCl per liter of apyrogenic water). The disturbance of homeostasis before treatment was marked by increased specific gravity of plasma, viscosity, and hematocrit and decreased volume of circulating plasma. Changes in the acid-base equilibrium and blood gases were manifested by signs of compensated respiratory alkalosis, metabolic compensated acidosis, and stagnant hypoxemia. Disruption of the movement of blood electrolytes was accompanied by decreased concentration of potassium,
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NIKIFOROV, V. N., et al., Sovetskaya Meditsina, No 9, 1971, pp 114-120

sodium, and chlorine. Fibrinolysis, clotting, recalcification, and heparin time increased while the prothrombin index and fibrinogen increased.

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UDC 577.3

SEMENOV, M. A., GASAN, A. I., and MALEYEV, V. Ya., Institute of Radiophysics and Electronics, Academy of Sciences UkSSR, Kharkov

"Study of Thermal Destruction of T_2 Phage and Its Components by Infrared Spectroscopy and Adiabatic Calorimetry"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 6, 1971, pp 1,449-1,451

Abstract: Heating of lyophilized T_2 phage and its structural components (protein fragments and DNA) produced spectral changes at three different temperature intervals. At 48°C there was a slight increase in optical density in the region of 1620 cm^{-1} , which ceased at $T = 58^\circ\text{C}$ (region A). Optical density in this spectral region increased still more at $T = 65^\circ\text{C}$ and ended at $T = 73^\circ\text{C}$ (region B). Similar spectral changes occurred at these temperature intervals when a suspension of fragments was heated. Since optical density increases at 1620 cm^{-1} with thermal denaturation of proteins, the spectral changes observed in regions A and B in the case of T_2 phage are assumed to be due to conformational changes in the protein coat. A further elevation of the temperature to 75 to 85°C (region C) resulted in spectral changes characteristic of the destruction of the secondary structure of DNA: increased absorption at frequencies of 1590 ,
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1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CHEMISTRY OF ENYNE ETHERS. II. SYNTHESIS OF PYRAZOLES -U-
AUTHOR-(03)-LISITSYN, YE.A., BLEYAYEVA, A.N., MALEYEVA, A.K.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(3), 439-42
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, CHEMICAL REACTION MECHANISM, SULFONATE,
AMINE DERIVATIVE, ACETYLENE, PYRAZOLE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1683 STEP NO--UR/0366/70/006/003/0439/0442
CIRC ACCESSION NO--AP0112677
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112677

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF ROCH:CHC TRIPLE
BOND CH (R EQUALS ME OR ET) WITH MENHNH SUB2 .H SUB2 SO SUB4 GAVE A
2.5:2 MIXT. OF 1,3,DIMETHYL PYRAZOLE WITH 1,5,DIMETHYLPYRAZOLE OR A 2:3
MIXT. OF THE CORRESPONDING DIETHYLPYRAZOLES. THE MECHANISM OF THIS
REACTION IS DISCUSSED. FACILITY: LENINGRAD, TEKHNOL. INST. IM.
LENISOVETA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 51

MAL'GIN, A. N.

"Application of Branch-and-Bound Method to a Model of the Optimum Branching of a Gas Main"

V sb. Mat. apparat. planov. raschetov (Mathematical Apparatus of Planning Calculations -- Collection of Works), Moscow, 1972, pp 183-196 (from RZh-Matematika, No 3, Mar 73, Abstract No 3V554 by YU. FINKEL'SHTEYN)

Translation: The author considers a gas main and set of $\{p_1, \dots, p_n\}$ points of potential gas consumers. Point p_i either has gas installed (and then consumes gas in quantity v_i , which produces economic effect c_i), or it does not have gas installed. By distance is meant a certain characteristic which depends solely on the reciprocal location of objects: for example, geometric distance, cost of pipes connecting two points, etc. Distances Z_i from points p_i to gas main and Z_{ij} between points p_i and p_j (for all i and j) are considered known. Total gas consumption and total pipe length are limited to given values. It is assumed that branching of the gas main can consist only of segments connecting points between themselves and with the gas main. What is sought is the branching which will maximize total economic effect.

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MAL'GIN, A. N., Mat. apparat planov. raschetov, 1972, pp 188-196

The formal statement of the problem has the following form: There is an unoriented graph $\Gamma = (N, A)$, where $N = \{i\}$ is a set of vertices and $A = \{(i, j)\}$ is a set of edges. On N , $v_i \geq 0$, $c_i \geq 0$ are given; on A , l_{ij} are given. What is sought is a connected graph $\Gamma^* = [N^*, A^*]$ which will maximize

$$\sum_{i \in N^*} c_i \quad (1)$$

subject to the constraints.

$$N^* \subset N, \quad (2)$$

$$A^* \subset A, \quad (3)$$

$$\sum_{i \in N^*} v_i \leq V, \quad (4)$$

$$\sum_{(i,j) \in A^*} l_{ij} \leq L. \quad (5)$$

The following proposition is correct: if the graph $\Gamma^* = [N^*, A^*]$

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MAL'GIN, A. N., Mat. apparat planov. raschetov, 1972, pp 188-196

is the solution of problem (1)-(5), then another solution will be the $[N^*, T(N^*)]$ tree of minimal (in the sense of distance \sum_{ij}) length, which covers the set of vertices N^* and has arcs from A .

For the solution a branch-and-bound algorithm is used, which essentially utilizes the specific properties of the problem. The procedure used is the algorithm for construction of a tree of minimal length (cf., for example, RZh-Matematika, 1966, Abstract No 11V249K).

Some recommendations for making practical calculations are presented. It is noted that: 1) the algorithm can be extended to the case in which there will be several constraints of form (4); 2) the algorithm makes it possible to obtain not only optimal plans but also all plans whose objective function does not differ from the optimal value by more than a prescribed number.

It is also noted that the optimal gas-main branching model is essentially the more general problem of limited-resource allocation on a graph and admits of certain other interpretations.

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UDC 532.593

MALI, V. I.

"Flow of Metals in a Hemispherical Groove Under the Action of Shock Waves"

Novosibirsk, Fizika gorennya i vzryva, No 2, 1973, pp 262-266

Abstract: The results are given of experiments involving the jets of various types of metal under the impact of shock waves on a free surface with a hemispherical groove for removing and guiding the metal flow. This paper is based in part on an earlier article (V. A. Simonov, FGV, 1971, 7, 2) which dealt with a similar problem where the groove was wedge-shaped. The author of the present paper claims an advantage in that this version of the problem offers a characteristic dimension, the radius of the hemisphere. An experimental expression is found for the dimensionless length of the jet as a function of the Reynolds number, which can be used to predict the depth of penetration of the target by jets of materials with known viscosity. A schematic diagram of the experimental apparatus is given together with photographs of the motion of the jet from a hemispherical groove 4 mm in radius, a steel target punctured by the jet from such a groove, and others. It is found that the

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MAII, V. I., et al, Fizika goreniya i vzryva, No 2, 1973, pp 282-286

cross section of the jet increases linearly with increasing radius of the groove, and that the length of the jet is proportional to the square root of the Reynolds number.

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Acc. Nr:

AP 0036881

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code:

U R 0456

78750a Reaction of p-toluidine with 1,2,3,4-tetrachloroanthraquinone under shock compression. Fokin, E. P.; Deribas, A. A.; Loskutov, V. A.; ~~Chelishchev, V. I.~~ (Inst. Org. Khim., Novosibirsk, USSR). *Khim. Vys. Energ.* 1970, 4(1), 89-91 (Rizis). A mixt. of 1,2,3,4-tetrachloroanthraquinone (I) and p-MeC₆H₄NH₂ (II) was subjected to 200 kbar pressure in a steel container to give the following results (amts. I and II before, and amts. I, 1-(phenylamino)-2,3,4-trichloroanthraquinone (III), and 2-(phenylamino)-1,3,4-trichloroanthraquinone (IV) after reaction in g given): 1.04, 0.31, 0.55, 0.48, 0.024; 1.04, 1.55, 0.84, 0.12, —; 1.04, 6.2, 1.00, —, —. Heating 1.04 g I and 0.62 g II in 40 ml Me₂SO 70 hr at 80° gave 0.9 g III and 0.13 g IV. J. Panchartek

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REEL/FRAME
19721801

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Acc. Nr:

APC053449

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

480366

111347z Reaction of [benzothiazolyl substituted] poly-fluorinated olefins with ammonia. Malichenko, N. A.; Vagupol'skii, L. M.; Kulik, V. F. (Inst. Org. Khim., Kiev, USSR). Zh. Org. Khim. 1970, 6(2), 380-84 (Russ). The reaction of $\text{RCF}_2\text{CF}_2\text{CF}:\text{CF}_2$ (R in this abstr. is benzothiazolyl) with aq. NH_3 solns. at 20° gave $\text{RCF}_2\text{C}(\text{NH}_2):\text{CFCN}$ (I). The reaction proceeds through $\text{RCF}_2\text{CF}:\text{CFCN}$ as the intermediate (not isolated). $\text{RCF}_2\text{CF}:\text{CF}_2$ reacts with aq. NH_3 at 20° to give $\text{RCF}:\text{CFCN}$ (II), which on heating to 60° in aq. NH_3 gives $\text{RC}(\text{NH}_2):\text{CFCN}$ (III). The possibility of I rearrangement to $\text{RCF}:\text{CFCF}_2$ (IV) and its conversion, under the above conditions, to $\text{RCF}:\text{CFCF}_2\text{NH}_2 \rightarrow \text{II} \rightarrow \text{III}$ was eliminated by reacting IV with aq. NH_3 at 60° which gave $\text{RC}(:\text{NH})\text{CHF}_2\text{CF}_2$. The presence of R in the above compds. accelerates the reaction. $\text{H}(\text{CF}_2)_n\text{CF}:\text{CF}_2$ requires reflux temps. with NH_3 to give $\text{H}(\text{CF}_2)_n\text{C}(\text{NH}_2):\text{CFCN}$ (V). Heating I, II, or V with aq. acid solns. gave $\text{RCF}_2\text{COCH}_2\text{F}$, RCOCH_2F , or $\text{H}(\text{CF}_2)_n\text{COCH}_2\text{F}$. CPJR

REEL/FRAME
19830474

USSR

UDC: 534.213

MALIK, D. D. and SINGKH, R.

"Shock Wave Propagation in a Generalized Roche Model"

Leningrad, Vestnik Leningradskogo Universiteta, Seriya matematika, mekhanika, astronomiya, No. 4, October 1971, pp 78-84

Abstract: The Roche model consists of a massive nucleus of finite dimensions surrounded by a shell of infinitely small weight. The problem of the movement of the gas inside the shell when a point at the center of the shell explodes has been solved for several values of specific heat capacity ratios, but these solutions have left several questions unanswered. Some of these questions are covered in the present article, in which the problem of the Roche model is solved for the specific heat capacity ratio of $4/3$. The solution was found by starting with the equations of motion in dimensionless form and obtaining an exact integral similar to that obtained by earlier investigators of the problem. A numerical solution was achieved for two values of shock wave intensity, one at Mach 3.16228 and the other at Mach 10. It is found that the

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MALIK, D. D. and SINGH, R., Vestnik Leningradskogo Universiteta. Seriya matematika, mekhanika, astronomiya, No 4, October 1971, pp 78-84

radius of the nucleus and the thickness of the shell increase with increasing intensity. Other conclusions differ widely from those found by earlier researchers. The author thanks Dr. Deb Ray of India for his criticism of the article.

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Acc. Nr:

AP0105527

Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code:

4R0370

124274y Segregation of chromium and manganese in cementite. Lev, I. E.; Malik, I. V.; Taran, Ya. N. (USSR). Izv. Akad. Nauk SSSR, *Met.* 1970, (1), 134-7 (Russ). The microsepn. of Mn and Cr from cementite alloys Fe-C-Mn and Fe-C-Cr was studied by local x-ray anal. In Mn alloys direct segregation occurs; in Cr alloys inverse segregation occurs.

Jehudah Eliassaf

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REEL/FRAME
19880542

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Foundry

USSR

UDC 669.187.25

KOCHO, V. S., IVANCHENKO, Yu. I., KOROBEKO, I. M., SHENEGOVTSOV, O. A., MALIKOV, G. P., and ANTIPENKO, G. I., Kiev Polytechnical Institute; Zaporozhye Electro-Metallurgical Works (Dneprospetsstal')

"Determination of the Instant of the End of the Power Melting Period in a Steel-Melting Arc Furnace"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 11, 1970, pp 70-72

Abstract: The possibility of determining the instant at which the steel melting period ends is discussed. A computation method is presented which is based on solution of a derived function from experimental data on melting ball-bearing steel in an arc furnace of the Dneprospetsstal' plant. A schematic of the computer is included.

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UDC 621.396.69.019.3

MALIKOV, I. M., KRISTALINSKIY, L. L.

"Improving the Reliability of Radio Parts"

Elektron. prom-st'. Nauch.-tekhn. sb. (Electronic Industry. Scientific and Technical Collection), 1971, No 4, pp 71-72 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5V299)

Translation: The example of MLT [varnished metal-film heat-resistant] resistors is used to perform a study aimed at the development and introduction of methods of improving the reliability of radio parts under mass production conditions as a result of improving the uniformity of the properties of the parts. On the basis of analyzing the existing production of resistors demonstrating the deficiencies of the technological process and the input control of the initial materials, measures were adopted to improve the production reliability. The bibliography has 7 entries.

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USSR

UDC 547.944/1

IL'YASOVA, Kh. T., MALIKOV, V. M., and YUNUSOV, S. Yu., "Order of the Red Banner of Labor" Institute of the Chemistry of Plant Materials, Academy of Sciences of the Uzbek SSR

"11-Hydroxypleiocarpamine -- a New Alkaloid from *Vinca Erecta*"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 6, 1970, pp 717-719

Abstract: A study of the aerial part of *Vinca erecta* Rgl. et Schmalh. collected 1-15 June 1965 near Sagyrdasht in the Tadzhik SSR during the fruit-bearing phase showed that the alkaloid sum in this plant is 0.53%. The sum was separated into phenol and non-phenol parts. Vincamine, vincanine, viner-vinine, ervamine and aquammicin were isolated from the nonphenol fraction. The phenol sum yielded vincanidine, aquatmine and a base (I) with a melting point of 228-229°C. This base dissolves readily in alcohol, chloroform, methanol, acetone and alkalis, and dissolves poorly in ether and benzene. Spectral and chemical analysis revealed that this alkaloid is a hydroxyl derivative of pleiocarpamine first isolated from the plant *Pleiocarpa mutica* Benth. By analogy with other alkaloids of similar structure, position 11 is assumed most likely for the hydroxyl group, and the structure of 11-hydroxy-pleiocarpamine (I) is proposed.

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1/2 038
UNCLASSIFIED
TITLE--EXPERIMENTAL STUDY OF A NONEQUILIBRIUM PLASMA --U--
AUTHOR--MALIKOV, M.M.
COUNTRY OF INFO--USSR
SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(2), 260-5
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--MAGNETIC FIELD EFFECT, SODIUM, ELECTRODE, ARGON, PLASMA
PHYSICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1410
STEP NO--UR/0294/10/003/002/0260/0265
CIRC ACCESSION NO--AP0133362
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133362

ABSTRACT/EXTRACT--(U) GP-D-

ABSTRACT. THE NONEQUIL. PLASMA OBTAINED BY USING A PULSE DISCHARGE IN CROSSED ELEC. AND MAGNETIC FIELDS WAS STUDIED. THE DISCHARGE WAS APPLIED TO A SUPERSONIC FLOW OF AR (WITH NA ADDN.) INSIDE A SPECIAL CHANNEL WITH SECTIONED ELECTRODES. THE PLASMA IN A MAGNETIC FIELD HAS A CHARACTERISTIC HETEROGENEOUS STRUCTURE, THE INDIVIDUAL PLASMA FILAMENTS BEING ELONGATED ALONG THE MEAN CURRENT DIRECTION. THE VALUES OF CRIT. PLASMA PARAMETERS AT WHICH THE HETEROGENEITIES APPEAR AND DISAPPEAR WERE DETD. EXPTL. INST. AT. ENERG. IM. KURCHATOVA, MOSCOW, USSR.

FACILITY:

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--CREPITANT PARATENONITIS OF THE ANTEBRACHIUM -U-
AUTHOR--MALIKOV, V.B. M.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK KHIRURGII IMENI. I. I. GREKOVA, 1970, VOL 104, NR 3, PP
60-62
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MEDICAL CAST, ORTHOPEDIC SURGERY, PLASTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1986/0635 STEP NO--UP/0589/70/104/003/0060/0062
CIRC ACCESSION NO--AP0102621
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102621

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR HAS STUDIED 212 CASE REPORTS OF PATIENTS WITH CREPITANT PARATENONITIS OF THE ANTEBRACHIUM. THE USE OF IMMOBILIZATION HANGING PLASTER CAST ON THE AFFECTED ANTEBRACHIUM AND HAND FOR A PERIOD NOT LESS THAN 8 DAYS IS CONSIDERED TO BE ESSENTIAL IN SUCCESSFUL TREATMENT OF CREPITANT PARATENONITIS. THE RECURRENCE WAS NOTED IN 7.5PERCENT OF CASES. AMONG PATIENTS TREATED FOR A SHORT TIME AND WITHOUT IMMOBILIZATION RECURRENT CREPITANT PARATENONITIS IS OBSERVED 3 TIMES AS FREQUENTLY.

UNCLASSIFIED

USSR

UDC 547.944

ARIPOVA, S. F., MALIKOV, V. M., and YUNUSOV, S. YU., Order of the Labor Red
Banner Institute of the Chemistry of Natural Products, Acad. UzSSR

"Convolvulus Alkaloids"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 3, 1972, pp 401-402

Abstract: Routine treatment of the roots of Convolvulus erinacius Ldb.
yielded cuscohygrine, and when the plant portion of the Convolvulus sub-
hirsutus Rgl. et Schmalh was worked up - only convolvine was isolated.

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USSR

UDC 547.944/1

RAKHIMOV, D. A., SHARIPOV, M. R., ARIPOV, Kh. N., MALIKOV, V. M., SHAKIROV, T. T., and YUNUSOV, S. Yu., "Order of the Red Banner of Labor" Institute of the Chemistry of Plant Materials, Academy of Sciences, Uzbek SSR

"Polybuffer Separation of Vinca Erecta Alkaloids"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 6, 1970, pp 713-717

Abstract: The complex alkaloid mixture from vinca erecta was separated by alkalinity on a special polybuffer separating unit. The mixture of alkaloids in an organic solvent was passed in sequence through a number of phosphate buffer solutions with different pH values arranged in order of increasing pH. The use of this method results in distribution of the alkaloids into fractions containing 3-6 bases apiece. The following bases were isolated in addition to previously identified alkaloids: evincidine, apovincamine, (+)-quebrachamine, dl-eburnamine, (-)-1,2-dehydrocaspidospermidine and copsanone. This is the first time that these bases have been derived from this plant. Ten or twelve other unidentified alkaloids were also detected by thin-layer chromatography. The region of passage of some alkaloids into the buffer solutions is established.

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--STRUCTURE OF ERVINCEINE, ERVAMYCINE, AND ERVINCINE -U-
AUTHOR--(04)-RAKHIMOV, D.A., MALIKOV, V.M., YAGUDAYEV, M.R., YUNUSOV, S.YU.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(2), 226-31
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PROCESSED PLANT PRODUCT, IR SPECTRUM, MASS SPECTRUM, NUCLEAR
MAGNETIC RESONANCE, MOLECULAR STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0466 STEP NO--UR/0393/T0/006/002/0226/0231
CIRC ACCESSION NO--AP0132681
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132681

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. FROM VINCA ERECTA, (MINUS) EBURNAMONINE AND 3 NEW ALKALOIDS ERVINCEINE (II), ERVAMYCINE (III), AND ERVINCININE (III) WERE ISOLATED AND STRUCTURES ASSIGNED ON THE BASIS OF CHEM. TRANSFORMATION AND UV, IR, NMR, AND MASS SPECTRA. II WAS HYDROGENATED TO I. FACILITY: INST. KHIM. RAST. VESHCHISTV, TASHKENT, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--2TNOV70
TITLE--DIFFERENCE IN N-H PROTON SIGNALS IN NMR SPECTRA OF INDOLE,
INDOLINE, AND HYDROXYINDOLE ALKALOIDS -U-
AUTHOR-(03)-YAGUDAYEV, M.R., MALIKOV, V.M., YUNUSOV, S.YU.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(1), 89-90

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, ALKALOID, INDOLE, INDOLE DERIVATIVE,
NUCLEAR MAGNETIC RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/0174

STEP NO--UR/0393/70/006/001/0039/0090

CIRC ACCESSION NO--AP0130933

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 012

CIRC ACCESSION NO--AP0130933

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CONSIDERABLE DIFFERENCE WAS FOUND IN THE N-H PROTON SIGNALS IN THE NMR SPECTRA OF VINCANINE, 2, 16, 19, 20, TETRAHYDROVINCANINE, VINERVININE, AKUAMMICINE, 2, 16, DIHYDROAKUAMMICINE, ERVAMINE, ERVINIDININE, DIHYDROERVINIDINE, COPSININE, PSEUDOCOPSININE, PICRININE, VINCARICINE, RESERPINE, ERVINE, O, ACETYLTCHBOSINE, O, ACETYLININQUIMBINE, VINERVINE, MAIDINE, ISOMALDINE, AND CARAPANAUHINE. THE POSITION OF THE N-H PROTON SIGNAL VARIES FROM TAU 6.50 WITH PICRIDINE UP TO TAU MINUS 0.69 WITH VINCANINE. FACILITY: INST. KHIM. RAST. VESHCHISTV, TASHKENT, USSR.

UNCLASSIFIED

Alkaloids

UDC: 547.944/945

USSR

YAGUDAYEV, M.R., MALIKOV, V.M., YUNUSOV, S.YU., Order of Labor Red Banner Institute of Chemistry of Plant Substances, Tashkent, Academy of Sciences Uzbek SSR

"Difference of N-H Proton Signals in the NMR Spectra of Indole, Indolene and Oxyindole Alkaloids"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1970, pp 89-90

Abstract: Data are given on the chemical shift of the N-H proton signal in the NMR spectra of vinca alkaloids. Twenty-three alkaloids were studied using the JNM-4H-100/100 instrument at room temperature with concentrations of 5-10% in a CDCl_3 solution with hexamethyldisiloxane as an internal standard. Dilution of a reserpine solution by a factor of more than 3 (from 15 to 5%) shifts the N-H signal by only 0.15-0.20 m.d. Thus it may be assumed that a change in concentration in the 5-10% range has little effect on the chemical shift of the N-H proton. It was found that the chemical shift of the N-H proton signal in -methylenindolines differs appreciably from that in the indole alkaloids. As a rule, the N-H chemical shift in -methylenindoline alkaloids is observed in a weaker field (-0.69 - 1.20 m.d.) than is the case for indoles (1.75-2.15 m.c.), while the N-H chemical shift for oxyindole alkaloids occupies an intermediate place (0.56-2.18 m. d.). In the 2-16-dihydro derivatives of the -methylenindoline alkaloids and in copsinine, pseudo-copsinine, picrinine and vincaricine, the N-H proton signal

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USSR

YAGUDAYEV, M.R., et al, Tashkent, Khimiya Prirodnikh Soyedineniy, No 1, 1970, pp 89-90

shifts sharply toward a stronger field (5.50-6.50 m.d.). This important criterion may be successfully used for recognizing and identifying new vinca alkaloids and for structural analysis.

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- 7 -

USSR

UDC 547.944

MIRZAMATOV, R. T., MALIKOV, V. M., LUTFULLIN, K. L., YUNUSOV, S. YU., Order of the Red Banner of Labor, Institute of the Chemistry of Plant Substances of the Uzbek SSR Academy of Sciences, Andizhan State Medical Institute imeni M. I. Kalinin

"Study of Physochlaina Dubia Alkaloids"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 4, 1972, pp 493-495

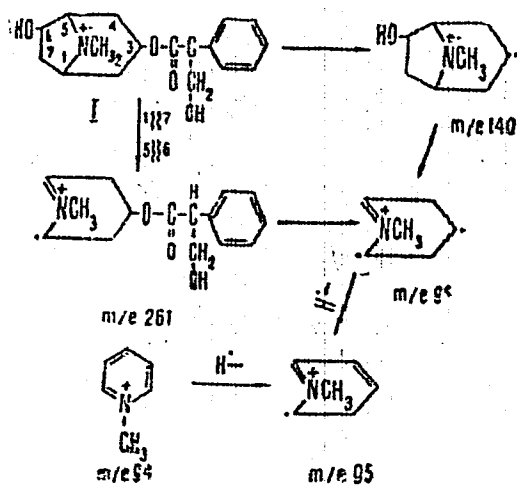
Abstract: Chloroform extraction was used to isolate 1.25% of the total alkaloids from the roots of Physochlaina dubia Pasch. (Ph. alatica E. Korot.) gathered in the flowering phase in the Fergan Oblast. By separating the mixture of bases by solubility in organic solvents, hyoscyamine and a new base I were obtained. The new base had a melting point of 61-62° (benzene),

$[\alpha]_D^{20}$ -- 13.5° (with 1.9 methanol), the bromohydrate with a melting point of 156-157° (acetone). The infrared, ultraviolet, nuclear magnetic resonance and mass spectral data and chemical properties of the base I indicate it has the structure of 6-oxyhyoscyamine

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USSR"

MIRZAMATOV, R. T., et al., Khimiya Prirodnikh Soyedineniy, No 4, 1972,
pp 493-495



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Acc. Nr:

AA0108720

Abstracting Service: 3-70

Ref. Code:

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

244353 AIR TUYERE AND GAS LANCE FOR BLAST FURNACE is fitted with a protective case (3) in the lance water jacket (1) to protect the insulation there. The ring gap between lance (2) and case (3) is rammed with vermiculite expanded in situ or perlite etc.

29.5.67 as 1160010/22-2. MALIKOV.K.V., V.L.LISHVANOV, A.L. GALATONOV et al. METALLURGICAL HEAT TECHNIQUES RES INST. (9.10.69) Bul 18/28.5.69. Class 18a. Int. Cl. C 21 b.

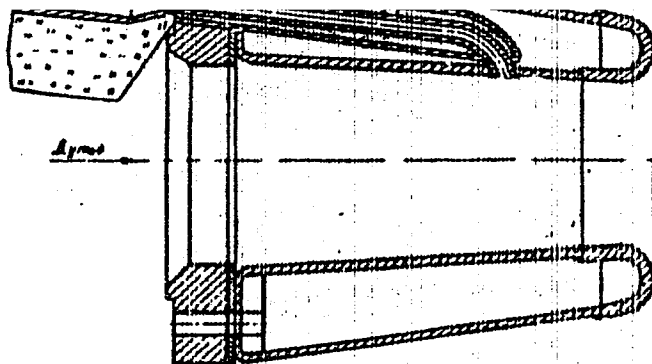
AUTHORS: Malikov, K. V.; Pishvanov, V. L.; Galatonov, A. L.; Babarykin, N. N.

Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Metallurgicheskoy Teplotekhniki

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REEL/FRAHE

19900494



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Reel/Frame

BS

19900495

Acc. Nr.: AA0108720



USSR

UDC 621.316.722

MALIKOV, V. Ya., KOSTENKO, V. I.

"A Device for Automatically Eliminating Asymmetry of Thyristors Connected in a Bipolar Rectifier Scheme"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrabotsy, "Osvetnyye Zashchi", No 5, Feb 72, Author's Certificate No 327553, Division H, filed 20 Jan 69, published 26 Jan 72, p 158

Translation: This Author's Certificate introduces a device for automatically eliminating asymmetry of thyristors connected in a bipolar rectifier circuit. The device contains sawtooth voltage shapers, an integral adder, a null detector for a DC component, a pulse-duration modulator and a power amplifier. As a distinguishing feature of the patent, displacement between controlling pulses is eliminated by connecting the null indicator for the DC component between the load of the power circuit and the input of the pulse-duration modulator. The pulse-duration modulator and amplifier are based on a single-channel circuit, while the sawtooth voltage shaper is based on a two-channel circuit.

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USSR

UDC 632.931:631.582

MALIKOVA, A. V., Candidate of Agricultural Sciences, Volzhskiy Scientific
Research Institute of Irrigated Farming, Volgograd

"Predecessor Crops and Root Rot of Wheat"

Moscow, Zashchita Rasteniy, No 10, 1971, pp 49-50

Abstract: The crops which have been planted in a field before spring wheat is planted there can increase the resistance of the wheat to root rot by suppressing *Helminthosporium sativum*, one of the agents of the disease. The predecessor crops which have this desirable property are corn, oats, millet, and buckwheat.

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USSR

UDC 612.886:612.181

MALIKOVA, S. N. and VENTSEL', M. D.

"Auto- and Cross-Correlation Analysis of Reactions of Vasomotor Neurons to Adequate Stimulation of the Vestibular Apparatus"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, 1971, pp 9-11

Abstract: In experiments on anesthetized cats, the impulse activity of 81 vasomotor neurons and the pulse wave of arterial pressure were recorded simultaneously in response to vestibular stimulation by vertical rocking on a stand. Auto- and cross-correlation analysis revealed two types of cell reactions: (a) most neurons (58) followed the rhythm of rocking, i.e., they acquired a new rhythm related to the up-and-down movements of the stand; (b) the other neurons (23) failed to exhibit any direct connection between neuronal activity and rocking. In some of the latter, the rhythm of impulse activity corresponded to that of the pulse wave of arterial pressure.

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1/2 021 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--INTERNAL STRESSES IN THE STRUCTURES OF HYDRATION HARDENING OF
MINERAL BINDING MATERIALS -U-
AUTHOR--(03)-KONTOROVICH, S.I., MALIKOVA, ZH.G., SHCHUKIN, YE.D.
COUNTRY OF INFO--USSR
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 224-228
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--MINERAL, INTERNAL STRESS, CALCIUM OXIDE, MAGNESIUM OXIDE,
CRYSTALLIZATION, CRYSTAL STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/0769 STEP NO--UR/0069/70/032/002/0224/0228
CIRC ACCESSION NO--AP0108970
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108970

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A ROENTGENOGRAPHIC STUDY HAS BEEN MADE OF THE EFFECT OF SOME PHYSICO CHEMICAL FACTORS ON THE VALUE OF INTERNAL STRESSES OF THE SECOND KIND ARISING DURING HYDRATION HARDENING OF MAGNESIUM AND CALCIUM OXIDES. DECREASE OF THE W-S RATIO AND OF THE PARTICLE SIZE OF INITIAL BINDING MATERIAL INCREASES MICROSTRESSES, WHEREAS ADDITION OF A FILLER, OF CRYSTALLIZATION SEEDS AND ELECTROLYTE DIMINISHES MICROSTRESSES IN CRYSTALLIZATION STRUCTURES.

UNCLASSIFIED

1-2 - 007
UNCLASSIFIED
PROCESSING DATE--11DEC70
TITLE--SYNTHESIS OF ENANTHOLACTAM BASED ON CYCLOPENTADIENE -U-
AUTHOR--(05)-ARTYKHEV, A.A., GENKINA, YE.V., GOLLOVKIN, G.V., KUNONOV, N.E.,
MALINCHUKA, A.B.
COUNTRY OF INFO--USSR
SOURCE--Zh. Prikl. Khim. (Leningrad) 1970, 43(5), 1137-40
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--LACTAM, CYCLIC GROUP, HEPTANE, AROMATIC KETONE, OXIME
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO--F07C/605001/E04 STEP NO--UR/0080/70/043/005/1137/1140
CIRC ACCESSION NO--AP0139368
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11DEC70

2/2 007

CIRC ACCESSION NO--AP0139368

ABSTRACT/EXTRACT--(U) GP-O-

ABSTRACT. THE TITLE MONOMER (I) WAS PREPD.

BY A SERIES OF REACTIONS FROM CYCLOPENTADIENE (II). THUS, II WAS
CONDENSED WITH C SUB2 H SUB2 AT 420DEGREES AND 2 ATM, THE RESULTANT
CYCLOHEPTATRIENE HYDROGENATED CATALYTICALLY AT 250DEGREES, AND THE
CYCLOHEPTANE PRODUCED WAS TREATED WITH NOCL PLUS HCL IN THE PRESENCE OF
LIGHT, AND FINALLY THE CYCLOHEPTANONE OXIME HYDROCHLORIDE WAS ISOMERIZED
TO I (IN 85-90PERCENT YIELD) AT 120-30DEGREES IN THE PRESENCE OF H SUB2
SO SUB4.

FACILITY: GOS. NAUCH.-ISSLED. PROEKT. INST. AZOTN.
PKOM. PRUD. ORG. SIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--HYDROGENATION OF M AND P-PHENYLENEDIAMINES ON RUTHENIUM DIOXIDE -U-

AUTHOR--(05)--GENKINA, YE.V., MALIMONOVA, A.B., MEDVEDEVA, I.M., ZENKINA,
N.G., RYZHENKO, L.M.
COUNTRY OF INFO--USSR

SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(1) 118

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYTIC HYDROGENATION, GAS CHROMATOGRAPHY, ANILINE,
CYCLOHEXANE, PHENYLENE, DIAMINE, RUTHENIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1412

STEP NO--UR/0063/70/015/001/0118/0118

CIRC ACCESSION NO--AP0112406

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112406

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGENATION OF M AND P-C SUB6 H SUB4 (NH SUB2) SUB2 AT 100-800DEGREES-180-200 IN MEOM OR DIOXANE OVER RUO SUB2 AND EXAMN. OF THE PRODUCT BY GAS CHROMATOG. WAS REPORTED. ALONG WITH 1,3 AND 1,4,DIAMINOCYCLOHEXANE, THE REACTION GAVE PHNH SUB2 AND CYCLOHEXYLAMINE, WHICH PROVED THAT A PARTIAL DEAMINATION TOOK PLACE EVEN AT 100-20DEGREES. THE YIELD OF PHNH SUB2 WAS 10-15PERCENT AND THAT OF CYCLOHEXYLAMINE 1-2PERCENT.

UNCLASSIFIED

USSR

UDC 621.396.6-181.5

MALIN, B. V., PONOMAREV, K. M.

"Semiconductor Integrated Circuits for Transducers of Nonelectrical Quantities to Electrical Quantities"

Kiev, IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1319-1329

Abstract: The authors consider semiconductor microcircuits designed for converting nonelectrical quantities into electrical quantities and combining elements sensitive to nonelectrical action and elements which operate with electric signals. Problems of developing microcircuits which register optical emission, mechanical stresses and magnetic field strength based on modern advances in microelectronics are discussed. The advantages of the proposed microcircuits are analyzed together with the part they are expected to play in the future development of conversion devices. Typical illustrative examples are presented. Eleven figures, bibliography of thirty-eight titles.

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USSR

UDC: 621.315.592.778.4

ZAKHAROV, V. I., KONYAKINA, Z. F., ~~MALIN, B. V.~~

"A Method of Photolithographic Treatment of the Surface of Plates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy. Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333632, Division G, H, filed 29 Jul 64, published 21 Mar 72, p 211

Translation: This Author's Certificate introduces a method of photolithographic treatment of the surface of plates of semiconductor materials by using sequential registration of the plates with master patterns. As a distinguishing feature of the patent, mechanical damage to the elements in registration is prevented by forcing an inert gas between them to create a gap controlled by changing the gas flow with regard to temperature. The patent also covers a modification of this method distinguished by the fact that the master pattern is located on the surface of the plate at the instant of light exposure by creating a vacuum between the master and the plate.

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USSR

UDC 622.82:654.9

MALIN, V. A., POLYAKOV, V. S. and SUMENKO, A. I.

"A Radio Signalling Method of Detecting Endogenic Fires"

Tr. Vost. NII po vezopasn. rabot v gorn. prom-sti (Proceedings of the Eastern Scientific Research Institute on Work Safety in the Mining Industry), No 16, 1972, pp 210-214 (RZh-Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 3, Mar 73, Abstract No 3, A347 by the authors)

Translation: It is shown that the temperature of the coal in worked-out areas of a mine can be monitored remotely, and various types of apparatus which have been developed to detect endogenic fires arising in worked-out areas of coal mines are presented. Reliability of monitoring is ensured by the use of sensors of a new design and a single-wire communications channel. Two illustrations.

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1/2 046 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--IONIZATION AGING OF A POLYETHYLENE FILM -U-
AUTHOR--(04)-BAGIROV, M.A., MALIN, V.P., GAZARYAN, YU.N., VOLCHENKOV, E.YA.
COUNTRY OF INFO--USSR
SOURCE--PLAST. MASSY 1970, (2), 44-6
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--IONIZATION, POLYETHYLENE, DIELECTRIC PERMEABILITY, IR
SPECTRUM, SPECTROSCOPIC ANALYSIS, CHEMICAL BONDING, SURFACE PROPERTY,
OXIDATION, MATERIAL DEGRADATION, PLASTIC FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1702 STEP NO--UR/0191770/000/002/0044/0046
CIRC ACCESSION NO--AP0112696

UNCLASSIFIED

2/2 046

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0112696

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYETHYLENE (I) FILMS (55 MU THICK) WERE SUBJECTED TO ELEC. DISCHARGES AT A VOLTAGE OF 7-11 KV (UNDER N OR AIR) AND THE RESULTING CHANGES IN DIELEC. LOSS FACTOR (TAN DELTA), DIELEC. PERMEABILITY (EPLISON), BREAKDOWN STRENGTH (E), AND THICKNESS (H) WERE RECORDED. IONIZATION AGING CAUSED A LINEAR DECREASE IN E AND H (THE RATE OF DECREASE BEING PROPORTIONAL TO THE VOLTAGE APPLIED), AND A DECREASE IN EPLISON. A PLOT OF TAN DELTA VS. TEMP. REVEALED A NEW DOMAIN OF LOSSES AT 20-80DEGREES, PRESUMABLY DUE TO THE PRESENCE OF LOW MOL. WT. COMPS. IR SPECTRA OF AGED I FILMS (IN AIR) HAD ABSORPTION BANDS CHARACTERISTIC OF OH GROUPS AND C:C DOUBLE BONDS AT 3200+600 AND 1640 CM PRIME NEGATIVE1, RESP. AN EQUATION WAS DERIVED FOR THE CALCN. OF THE NO. OF OXIDIZED UNITS IN I. IONIZATION AGING CAUSED CHEM. CHANGES IN A RELATIVELY THIN SURFACE LAYER OF I FILMS.

UNCLASSIFIED

USSR

UDC 621.789:621.9.048:3.669.24'74

SADOVSKIY, V. D., MALINEN, P. A., and MEL'NIKOV, L. A., Institute of Metal Physics, Academy of Sciences USSR

"Effect of High Pressure and a Pulsed Magnetic Field on Martensite Transformation in Fe-Ni and Fe-Ni-Mn Alloys"

Moscow, Metallovedeniye, No 9, Sep 72, pp 30-37

Abstract: A study was made of the effect of high hydrostatic pressure and a pulsed magnetic field on the character of the austenite-martensite transformation in alloys with a sharply pronounced athermal or isothermal type of transformation. The alloys studied were:

N31	0.015% C	31.6% Ni	0.3% Mn
N24G3	0.05	23.6	3.3
N23G3	0.06	22.7	3.3
N23G4	0.045	22.8	4.0

It was determined that hydrostatic pressure, lowering the martensite transition temperature, does not alter the explosive nature of the martensite transformation in alloy N31. For the isothermal transformation (in alloy N23G3), hydrostatic pressure sharply decreases the transformation speed and causes a

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USSR

SADOVSKIY, V. D., et al., Metallovedeniye, No 9, Sep 72, pp 30-37

lowering of the kinetic maximum temperature. Previous plastic deformation does not lower the temperature interval of transformation in alloy N31 but strongly decreases the magnitude of the first and subsequent bursts. In Fe-Ni-Mn alloys, prior plastic deformation, suppressing the isothermal transformation, lowers the volume of athermal transformation in the magnetic field very little. Tempering of austenite suppresses isothermal transformation but does not affect the athermal transformation activated by the pulsed field. 10 figures, 1 table, 15 bibliographic references.

2/2

1/2 038 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--LOCAL DISTRIBUTION OF POINT DEFECTS IN GAMMA IRRADIATED METALS -U-

AUTHOR--MALINEKO, I.A., SHIVRIN, O.N.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1), 150-3

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAMMA IRRADIATION, IMPURITY LEVEL, CRYSTAL DEFECT, CRYSTAL
LATTICE PARAMETER, GAMMA SCATTERING, MOLYBDENUM, NICKEL, COPPER,
DISTRIBUTION COEFFICIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1989/1337

STEP NO--UP/0135/70/015/001/0150/0153

CIRC ACCESSION NO--AP0107810

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UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107810

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METALS CONTG. IMPURITIES (NO 99.98PERCENT, NI 99.9PERCENT, CU 99.98PERCENT) WERE SUBJECTED TO GAMMA IRRADN. OF MAX 10 PRIM7 R DOSE. THE OBSERVED INCREASE OF DIFFUSE SCATTERING INTENSITY IS DUE TO THE PRESENCE OF POINT DEFECTS, WHICH ARE FIXED IN CRYSTAL LATTICE BY IMPURITY ATOMS. THUS OBTAINED VALUES OF IMPURITY CONCNS. IN THE METALS AGREE WITH THE DATA OBTAINED BY CHANGES OF LATTICE PARAMETERS OF THESE METALS.

3322322222

MALININ,

A.Yu.

50. JPRS 59379
14 June 73

MECHANISM OF AUTOEPITAXIAL GROWTH FROM THE VAPOR-GAS MIXTURE
($\text{SiCl}_4 + \text{H}_2 + \text{JCl}_3$) IN THE OPEN PROCESS

Article by Yu. D. Chistyakov, A. Yu. Malinin, V. N. Shumakov, Novosibirsk,
Proletarsky District, 1. Struktura kondensatnoy i epitaxialnoy stroyki tolyudovodnikov --
Trudy Simpoziuma, Kazan, Part 2, 1969, pp. 23-32

Introduction

The existing concepts of the growth of autoepitaxial layers of silicon can not give an answer to a number of the problems of practical importance advanced by epitaxial technology. Inasmuch as the method of obtaining autoepitaxial layers of silicon by reducing it with hydrogen from halides in the open process has been most developed, and it is widely used in epitaxial technology, without a doubt any efforts more precisely to define the mechanism of the epitaxial process are expedient.

The mechanism of autoepitaxy of silicon discussed earlier [1, 2] in general outlines was based on the assumption of the existence of a continuous thin layer of liquid phase coating the surface of the substrate and participating in the process of growth of the autoepitaxial layer of silicon.

The indicated layer is formed in accordance with the phase equilibrium diagram of the Si-O-Si-Cl_2 system [3] is the alloying additive, [3] is a random admixture. This layer differs with respect to composition and mechanism of formation from the layers of the liquid phase which were discussed in the papers by Wagner, et al. [3, 4], Fildy and Nielsen [5], and so on.

The VLS (vapor-liquid-solid state) mechanism proposed by these authors provided for the presence of a specially applied layer of one of the metals giving the light-alloy eutectic point with the substrate. When the silicon reaches the surface of the artificially formed liquid phase, growth of the autoepitaxial layer of the silicon on the liquid phase-substrate interface takes place.

The purpose of this paper is to confirm the reality of the existence of the liquid oxygen-containing phase occurring spontaneously during the process

USSR

UDX 621.315.592:546.28

CHISTYAKOV, YU.D., RAYNOVA, YU.P., MALININ, A.YU.

"Mechanism Of Formation Of Oxide Films Of Silicon From Vapor-Gas Mixture
[SiO₁₄ + H₂ → CO₂]"

Sb.nauch.tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1972, Issue 8, pp 174-183 (from RZh:Elektronika i yeye primaneniye, No 9, Sept 1972, Abstract No 9B84)

Translation: The principal kinetic characteristics are considered of the process of reaction of SiO₁₄ with H₂ and CO₂, and conclusions are drawn concerning the reaction mechanism of the latter. The micromechanism of the formation of the oxide phase of the vapor-gas mixture [SiO₁₄ + H₂ + CO₂] is considered in accordance with the phase diagrams in the system Si-O. 7 ref. Summary.

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USSR

UDC: 541.1+559.223+640.43.5+539.16

SKLYARENKO, I. YA., MALININ, G. E., PRISEKOV, YU. A., ZEMAROV, I. YE.,
and SPITSYN, VIKT. I.; Department of Radiochemistry, Moscow State
University; Institute of Physical Chemistry, Academy of Sciences USSR

"Vaporization of Silver Under Beta-Irradiation of the Evaporating Surface"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II. Khimiya, no. 6,
vol. 11, Nov-Dec 70, pp 737-739.

Abstract: A number of earlier papers have been devoted to the effect of both external and internal irradiation on the vaporization of various substances. Most investigations, however, were conducted under conditions of inadequately high vacuum and in atmospheres of residual gases which, combined with radiation, could have had specific effects on the metal's surface. The objective of this study was vaporization of pure silver under β -irradiation of its surface under high vacuum of $1 \cdot 10^{-8}$ - $5 \cdot 10^{-8}$ tor. The irradiation source was an equilibrium mixture ^{90}Sr - ^{90}Y applied by

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SKLYARENKO, I. YA., et al, Vestnik Moskovskogo Universiteta, Seriya II. Khimiya, no. 6, vol. 11, Nov-Dec 70, pp 737-739

sintering, in the form of strontium oxide, to the inner surface of the ceramic cover of the Gaudsen chamber. The radiation dosage was 32 rad/sec. The measurements were made by a device designed for determining vapor pressure by effusion. The effusive flow was measured by a specially equipped mass spectrometer (omegatron) calibrated for silver within 1304 to 1157°C. Vacuum was produced by a heterodionic titanium pump. The basic components of residual gases were CO, H₂ and a small amount of H₂O. The effusion chamber proper was made from aluminum which was inert to silver. The experimental data and the derived equations show that the employed strength of β -irradiation of silver under conditions of high-vacuum and surface purity had hardly any effect on the process and kinetics of vaporization.

USSR

UDC 546.791.4

VDOVENKO, V. M., ROMANOV, G. A., MALININ, G. V., and SOLNTSEVA, L. V.

"Synthesis and Investigation of Some Physico-Chemical Properties of $\text{UOF(OH)} \cdot 0.5 \text{H}_2\text{O}$ "

Leningrad, Radiokhimiya, Vol 12, No 5, 1970, pp 762-764

Abstract: The compound $\text{UOF(OH)} \cdot 0.5 \text{H}_2\text{O}$ was synthesized by adding fluorine ions at a ratio of 1:1 to U(IV) solutions in perchloric acid. Upon addition of a base the color of the solution changes from greenish-blue to brown and a fine crystalline black precipitate falls out at pH 1.8. The product contains 79.76% of uranium, agreeing well with the proposed structure. Thermogravimetric and infrared analyses carried out also supported the proposed structure for the above product. This compound is insoluble in water, and dissolves easily in aqueous solutions of mineral acids forming a fluoride complex UF_6^{3+} . When heated to 250° it converts to UOF(OH) .

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1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CREEP IN STRUCTURAL ELEMENTS MADE OF POLYMERIC MATERIALS -U-
AUTHOR--MALININ, N.I.
COUNTRY OF INFO--USSR
SOURCE--PMTE, ZHURNAL PRIKLADNOI MEKHANIKI I TEKHNIЧЕСКОI FIZIKI,
MAR.-APR. 1970, P. 109-125
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, PHYSICS
TOPIC TAGS--CREEP, PLASTIC, ANISOTROPY, VISCOELASTICITY, CONSTRUCTION
MATERIAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1090 STEP NO--UR/02077/0/000/000/0109/0125
CIRC ACCESSION NO--490134779
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134779

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. PHENOMENOLOGICAL STUDY OF THE FINDINGS OBTAINED IN THE LITERATURE ON CREEP PROCESSES OCCURRING IN STRUCTURAL ELEMENTS MADE OF PLASTICS. THE BASIC CREEP PATTERNS OBSERVED IN PLASTICS UNDER CONDITIONS OF A SIMPLE STRESSED STATE ARE SUMMARIZED. THE BEHAVIOR OF POLYMERIC MATERIALS IN A COMPLEX STATE IS CONSIDERED ON THE BASIS OF SEPARATE STUDIES OF THE PROPERTIES OF ISOTROPIC AND ANISOTROPIC POLYMERS, SINCE THE BEHAVIOR VARIES IN EACH OF THESE TWO CASES. CERTAIN PRACTICAL INVESTIGATIONS CONCERNED WITH THE DEVELOPMENT OF THE BASIC PRINCIPLES OF VISCOELASTICITY THEORIES AND WITH METHODS OF SOLVING VALUE PROBLEMS ARE CITED.

UNCLASSIFIED

USSR

UDC: 620.10

BOYKOV, V. N., Candidate of Technical Sciences, Docent, BOYTSOV, Yu. I., Senior Instructor, ~~MALININ, N. N.~~, Doctor of Technical Sciences, Professor, Moscow Higher Technical Academy imeni N. E. Bauman

"Investigation of Short-Term Creep of Boiler Steel"

Moscow, Izv. VUZov: Mashinostroyeniye, No 9, 1972, pp 9-12

Abstract: The paper presents the results of a study of the short-term creep of 12Kh1MS boiler steel at 1150°C and initial stresses from 102 to 198 kg/cm². The tests were done on cylindrical specimens with working section 10 mm in diameter and 100 mm long on the MP-12000M creep testing machine. The heating rate was about 15°C per minute with holding for a given cycle of one hour. An EPP-09M potentiometric chart recorder was used for continuous temperature monitoring. Deviations from the planned temperature were no more than ±0.5% along the working section. Relative loading error was ±1%. Deformations were continuously recorded by another EPP-09M potentiometer, and by a voltage divider mounted on the strain gauge of the tester. The strain gauge registered deformations up to 12%. The specimens were chrome-plated to prevent scale formation. An averaged creep curve was plotted on each stress level from test data for three
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BOYKOV, V. N. et al., Izv. VUZov: Mashinostroyeniye, No 9, 1972, pp 9-12

specimens. Deviations from the average did not exceed 15%. The experimental data are compared with various theories, and it is found that the theory of hardening gives curves which match best with the experimental creep curves.

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USSR

UIC 636.2:615.9

GLADENKO, I. N., MALININ, O. A., TRIFONOVA, T. K., SHULYAK, V. D., and
KARTASHEV, M. V., Ukrainian Scientific Research Institute of Experimental
Veterinary Medicine

"Toxic Properties of Sevin and Prophylaxis of Poisoning"

Moscow, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh
Nauk Imeni V. I. Lenina, No 1, Jan 73, pp 38-39

Abstract: An aqueous suspension of sevin in a 0.1-0.85% concentration has satisfactory acaricidal activity on sheep treated in vats, without any toxic manifestations. Even the 0.1% dose resulted in total kill of the parasitic mites. Oral administration of sevin leads to a rapid absorption so that in 30 min it can be observed in considerable quantities in blood, all parenchymatic organs and skeletal muscles. Maximal concentration after 4-6 hrs is observed in liver and kidneys. After 4 days no traces of sevin can be found in any organs. Sevin exhibits no cumulative properties, being rapidly excreted from the organism. Sevin residues may be found in milk and meat. Milk from the cows exposed for three days to this agent should be checked for residual content of the chemical; no beef should be slaughtered within one week of the exposure to sevin.

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UDC 632.95

MALININ, O. M.

"On a Method of Determining Residues of Sevin in Animal Tissues"

Tr. 2-go Vses. soveshch. po issled. ostatkov prestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on Investigation of Residues of Pesticides, and Prevention of Pesticide Contamination of Foodstuffs, Fodder and the External Environment), Tallinn, 1971, pp 172-173 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N410)

Translation: A colorimetric method has been developed for determining sevin in the tissue of animals using fast blue B (sensitivity 2-3 γ), as well as a thin-layer chromatographic method on Al_2O_3 (90 g. Al_2O_3 , 10 g. SYRAN, and 5 g. AcOH) in $CHCl_3$. The plates are then treated with 3.5 N solution of KOH in a mixture of EtOH and MeOH (1:1), dried, and treated with a diazo reagent (a mixture of 10 ml of 0.1% solution of p-nitroaniline in 0.1 N HCl and 1 ml of a 2% solution of $NaNO_2$). The sensitivity of the method is 0.4-0.5 γ . The pesticide is extracted with $CHCl_3$.

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USSR

UDC 002.63:621.3

MALININ, S. G.

"Problems of Optimizing a Sector Data System: The Electrical Engineering Industry"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, No 12, 71, pp 12-16

Abstract: The importance of the information industry to the electrical engineering industry due to recent increases in growth rates is discussed. It is pointed out that an information system for the electronics industry should involve information centers, "Informelektro", 19 scientific and technical centers for complex problems of electronics, more than 100 major scientific research institutes and design bureaus, and about 400 enterprises; a total of 4,100 data processing workers; a bank of 20 million primary documents in the field, a bank of secondary documents of 35 million units, and an annual growth of primary documents of the order of 225,000 units. The system should incorporate selective dissemination of information and specify control aphezes for priority information. The "empty-nonempty-2" information system that automatically indexes texts in the Russian and English language and is primarily oriented toward research and development personnel in the electrical engineering field is described. The rate

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MALININ, S. G., Nauchno-tehnicheskaya informatsiya, No. 12, 71, pp 12-16

of indexing is 2,000 documents per week under the existing state of the system, and as of 1 January 1971 about 180 thousand documents have been put into the system. The depth of indexing was up to 50 descriptors per document with a volume of 1,000 symbols. The rate of search was 30 seconds per question covering 5,000 documents or about 10 minutes for 100 thousand documents. The search programs are designed for simultaneous search of 30-40 questions. The Central Sector Institute of Scientific and Technical Information (the Department for Scientific and Technical Information of the All-Union Scientific-Research Institute of Electromechanics) is processing and automatically indexing all documents in electrical engineering. Functional and organizational structures are developing prerequisites for constructing in 1971-1975 an integral information system for electrical engineering that includes automatic processing of scientific, technical, and economic information for all levels of control and raises the accuracy for the scientific foundation and accuracy of plans for the development of new engineering and industry. Mathematical models will be produced for these purposes that will make it possible to develop alternatives for future development and increase the accuracy of planning and prediction of development through the use of information stored in the system.

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USSR

UDC 002.513.5:681.3:621.3

MALININ, S.G., CHERNYAVSKIY, V.S., and SHNEYERSON, A.Z.

"Experiment in Debugging an Automated Information Retrieval System for Electrical Engineering"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2, Informatsionnyye Protessy i Sistemy, No 1, 1971, pp 21-25

Abstract: The Information-Reference Center for Electrical Engineering, which is part of the Department for Scientific-Technical Information of VNIIEI [Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Elektromekhaniki; All-Union Scientific Research Institute of Electromechanics], is adopting the "Pusto-Nepusto-2" information retrieval system. This article describes the technological aspects of the problem of automatic indexing of documents for the system.

Today, the center already has some 150,000 secondary documents (abstracts, annotations, patents, and so on) available, and 1,000-2,000 documents are automatically indexed each week, each document requiring 50-60 seconds of machine time. However, in 1967, when debugging of the automatic indexing process was begun, although indexing and retrieval had already been turned over to the computer and 15,000 documents had been coded, attempts to cope with the regular input of as few as 100 documents a week had been unsuccessful. The reasons for this fell into three basic categories: 1) the staff's lack of understanding of

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MALININ, S.G., et al., Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2, Informatsionnyye Protsessy i Sistemy, No 1, 1971, pp 21-25

the meaning of "technological process" when applied to semantic processing of information; 2) inconsistencies, lack of coordination, and lack of clear distribution of responsibility in the organizational structure of the center; and 3) psychological factors.

After giving examples of all three types of reasons, the authors discuss the steps that were taken to improve the situation. First, the center was reorganized as an independent subdivision; and second, in order to reduce the Minsk-22's downtime, reorganization and retraining of computer operators and electricians were carried out. This program was successful -- in the first six months of 1968, only 44 hours of downtime were due to machine breakdowns. Next, changes were made in the structure of the center in accordance with the following basic principles: 1) separation of experimental and routine work; 2) the organization of a dispatcher service as the core for automatic indexing. Finally, the indexing process itself was analyzed in detail and, based on this analysis, a preliminary system to process 200 documents a week was set up and then tested.

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MALININ, S.G., et al., Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2, Informatsionnyye Protsessy i Sistemy, No 1, 1971, pp 21-25

The process of indexing was conceived of in terms of the processing of industrial components, and the system was organized along these lines. Every effort was made to establish psychological contact between the system and the staff using it. Therefore, losses of machine time and excessive manual labor were ignored and, instead, personnel were required to carry out each component operation slowly and with as few mistakes as possible. Another essential point that was emphasized was the need to strictly observe the production cycle: that is, to carry out an operation only on the days and at the times of day allotted to it. After this system had been thoroughly tested and mastered, a new one, intended for the processing of a larger number of documents, was set up, and so on, until the present level of competence was attained.

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USSR

UDC 632.4.582.288.42:632.938

MALININ, V. M.

"Wilt-Resistant Cotton Varieties and the Maintenance of Their Wilt-Resistance"

Leningrad, Mikologiya i Fitopatologiya, Vol 5, No 3, 1971, pp 257-262

Abstract: Cotton was raised experimentally in two areas subject to wilt. In the first area, all seeds of unaffected plants were collected and resown. In the second, no special selection of seeds was made. This was repeated during period 1959 to 1965. Wilt fungi were divided into groups by intensity of virulence; cotton species were divided according to wilt resistance. The relationships established by the tables presented on this data do not remain constant, however, as sensitivity of cotton species to wilt increases gradually. This is due not only to accumulation of infection in the soil, but to the adaptability of fungus species. This process can take up to 15-20 years; the rate depends on how quickly fungus species develop and accumulate that can infect the most wilt-resistant plant species. It is recommended that this procedure be followed, i.e., gathering and resowing seeds from healthy plants. Wilt-resistant plant forms were Tashkent 1, 2, and 3.

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1/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--TREATMENT OF CEMENT MORTARS -U-

AUTHOR--(C5)--OGGLIKHIN, E.A., TIFOKHIN, I.M., TOKUNOVA, V.V., MALININA,
A.I., MUKHIN, L .
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,674
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOYARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CEMENT, CONSTRUCTION MATERIAL, PATENT, CELLULOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1470

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128869

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AAG126869

ABSTRACT/EXTRACT--(U) CP-O- ABSTRACT. CEMENT MORTARS WERE TREATED WITH ADDITIVES. TO REDUCE THE WATER LOSS FROM CEMENT MORTARS AT 20-70DEGREES AND TO RETARD HARDENING TIME AT LESS THAN 200DEGREES, 0.25-1.0 WT. PERCENT CARBOXYMETHYL SULFATE CELLULOSE WAS USED AS AN ADDITIVE.

UNCLASSIFIED

USSR

UDC 621.357.7:669.387:669.3-416

GOLOVINA, YE. S., KOCHEROVA, A. V., KOROTKOVA, T. S., BUVHINSKAYA, A. V.,
BONDAREV, V. V., and HALININA, I. G., State Scientific Studies and Design
Institute for Alloys and the Processing of Light Metals

"Electrochemical Process for the Treatment of the Surface a Copper Foil"

Author's Certificate No 338558, filed 16 Jul 70, published 9 Jun 72 (from
Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L299F)

Translation: An electrochemical process is patented for the treatment of the surface of copper foil during the preparation of foil-containing dielectrics. This includes the galvanic deposition on the surface of a layer of copper-cuprous oxide from a copper plating electrode. It is improved in that in order to increase the strength of the bond between the foil and the dielectric, the surface is additionally treated cathodically in a solution containing 10-70 g/liter of an alkali metal dichromate. For example, on the surface of a copper foil a microbuffing layer of copper oxide is deposited galvanically from a solution containing in g/liter: CuSO_4 , 100; H_2SO_4 , 75; NaCl , 0.058; and gelatin, 0.050 -1.000. The process is performed using a D_k of 8 -10 amps/dm², a temperature of 20 - 23°C for 0.5 -1.0 minutes. The anode is lead. After 1/2

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GOLOVINA, YE. S., et al., Author's Certificate No 338558, filed 16 Jul 70,
published 9 Jun 72

rinsing with running the surface of the foil is supplementarily treated
cathodically in a 7% solution of potassium dichromate at a D_k of 1 - 2 amps/dm²
and a temperature of 20° for 30 seconds. Then the foil is washed in running
water and dried carefully, either by hot air or in a thermostat of 60 - 70°.

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AA0038801

Malinina, L. A. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-78

238380 HEAT TREATMENT OF CONCRETE AND REINFORCED CONCRETE ARTICLES is carried out by means of a.c. of main frequency during the vibrational formation of the articles. The temperature is rapidly increased to 90-100°C (instead of the conventional rate of 20°C/hr.), whereby the duration of the articles, the moulds are removed without delay, and the articles are further heated at the same temperature until the desired strength is reached. As electrodes, insulated parts of the forming machines or reinforcement elements are used. Compared with the known methods, this process is shortened by 2-4 hrs. The density of the articles is increased, because the vibrational formation is carried out at elevated temperatures. There is no temperature gradients, so that internal stresses do not develop. The removal of the mould elements is facilitated because of the formation of a vapour layer at the contact surfaces. 26.10.67. as 1194252/29-33. B.A.KRYLOV et alia. Institute of Concrete and Reinforced Concrete. (10.7.69.) Bul.9/20:2.69. Class 80a. Int.Cl. B28c.

19740001

AAOC38801

AUTHORS: Krylov, B. A.; Li, A. I.; Malikhina, L. A.;
Mironov, S. A.; Rudenko, I. F.; Polomeyev, A. A.;
and Shchurov, Yu. I.

Nauchno - Issledovatel'skiy Institut Betona i Zhelezobetona

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19740002

USSR

UDC 576.851.49.097.22:615.332 (STREPTOMYCINUM)

TARANENKO, T. M., VEYNBLAT, V. I., BAKHRAKH, Ye. E., MALININA, Z. Ye.,
ORLOVA, L. S., and ANDREYEVA, I. P., All-Union Mikrob Antiplague Institute,
Saratov

"Comparative Characteristics of Somatic Polysaccharides Isolated From Strain
EV and Its Streptomycin-Resistant Variant"

Moscow, Antibiotiki, Vol 18, No 3, 1973, pp 213-216

Abstract: Chemical and immunochemical comparisons were made of the lipopoly-
saccharide (LPS) and the main somatic antigens (MSA) isolated from the vaccine
strain EV NIEG of the P. pestis (I), and its nonimmunogenic streptomycin
resistant variant EV Str^r61 (II). The cells were grown on a solid nutrient
medium for 48 h at 28°, and the antigenic preparations were obtained from
acetone-dried cells. MSA was obtained by extraction with trichloroacetic
acid, purified on a column of Biogel P-200, and MSA-containing fractions sel-
ected on the basis of serologic reactivity and absorption at 280 nm. LPS was
isolated by water-phenol extraction; phenol was removed by dialysis and MSA
and nucleic acids by gel filtration on a Sepharise 2B column. For sugar
analyses LPS and MSA were hydrolyzed with H₂SO₄, and the monosaccharides
identified by thin-layer chromatography on silica gel. Infrared (IR) spectra
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TARANENKO, T. M., Antibiotiki, Vol 18, No 3, 1973, pp 213-216

②

were used for the detection of lipids. MSA was found to be present in greater quantities in I than in II, and in both cases lipids were absent. MSA isolated from I and II contained glucose, galactose, and glucosamine; however, twice as much glucosamine was present in MSA derived from I than in that derived from II, while more galactose was present in the MSA derived from II than in that from I. In addition, MSA isolated from II also contained mannose, and a sugar with an R_f value close to that of fucose. Gel precipitation with equine antiplague serum and the first component of MSA showed that the titer of the preparation derived from I was 2.5 times as great as that of the preparation from II. No significant chemical differences were found between LPS derived from I and II; both preparations contained virtually identical amounts of reducing substances (about 19%), glucosamine (2-2.5%), and limited quantities of proteins and nucleic acids. IF spectra for both preparations were virtually indistinguishable. The obtained data indicate that streptomycin does not affect the LPS component of the *P. pestis* cell wall, but alters the metabolic processes involved in the formation of MSA.

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Antibiotics

USSR

UDC 576.851.45.094.18:615.332(Streptomycinum)

KENIG, E. E., ZHUKOV, V. G., MALININA, Z. Ye., and SAGHYEVA, O. F., Institute of Human Morphology, Academy of Medical Sciences USSR, Moscow

"Changes in the Ultrastructure of the *P. pestis* in Guinea Pig Organisms Under the Effect of Streptomycin"

Moscow, Antibiotiki, Vol 18, No 6, Jun 73, pp 546-549

Abstract: The purpose of the study was to investigate changes in the ultrastructure of *P. pestis* in animal organisms treated with streptomycin. Guinea pigs were injected with a virulent culture (strain 363/4) and treatment with streptomycin was begun on the second day after infection. Treated animals were killed 2-10 days after treatment was begun and were studied bacteriologically and with an electron microscope. It was found that plague bacilli in this case may be subject to intracellular bacteriolysis, with preservation of the cytoplasmic membrane. Involution was manifested. Polymorphism of the plague microbe was more marked in animals treated with streptomycin than in the control animals, with bacterial cells 0.5-1.0 microns in size predominating. Under the influence of streptomycin, plague microorganisms lose their shells and cytoplasmic membranes and granulative degradation and lysis occur.

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KENIG, E. E., et al., Antibiotiki, Vol 18, No 6, Jun 73, pp 546-549

One of the early ultrastructural manifestations of therapeutically caused pathomorphism of experimental plague in guinea pigs treated with streptomycin is an increase in the number of lysosomes in the cytoplasm of the macrophages and neutrophils.

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- 6 -

USSR

UDC: 620.179.05: 538.54.083.8

TRILISSKIY, V.M., MALINKA, A.V., SOSNINA, L.L.,
YURCHENKO, S.V., SOSNOVSKIY, M.I. and CHERNEY, L.I.

"Automatic Eddy-Current Installation for Control of Continuity,
Diameter and Wall Thickness of Seamless, Stainless Pipes"

Sb. Electromagnit. metody nerazrushayushch. Kontrolya (Symposium
on Electromagnetic Methods of Nondestructive Control) Minsk, Nauka
i Tekhnika Publishing House, 1971, pp 139-142 (from Referativnyy
Zhurnal-Metrologiya i Izmeritel'naya Tekhnika, No 8, 1972, Abstract
No 8.32.224)

Translation: An automatic installation to detect defects, and to measure
the wall thickness and the outside diameter of seamless, cold-drawn,
stainless pipes of 6-12 mm diameter is described. The basic part of
the automatic installation is the control system, including the servo-
mechanism, common circuits, centering and drawing mechanisms,
electronic analyzing blocks and actuator mechanisms. The control
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USSR

TRILISSKIY, V. M., et al., Sb. Elektromagnit. metody nerazrushayushch. Kontrolya, 1971, pp 139-142

system includes also a mimic bus consisting of several MTx-90 tubes and making it possible to monitor the operation of the mechanisms and instruments. The electronic part of the control system makes it possible to detect separately the external and internal defects, the deviations of the wall thickness and mean diameter. The instruments are set according to calibrating devices. Two indicating blocks contain an electronic radiation tube with rotary scanning, synchronized with the rotation of printed pickups. The line is handled by a single operator. The pipes pass through an automatic control device. The defects are marked with dye. The pipe ends are marked by means of an electric arc device. After marking, the pipes are sorted into containers.

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Welding

USSR

UDC 621.791.053.01:669.017.3:669.295

KUZNETSOV, V. D., MALINKIN, I. V. (Engineers), CHERNYSH, V. P. (Cand. of Techn. Sciences), and MAZOK, V. K. (Engineer)

"Effect of Electromagnetic Stirring of the Weldpool on Both the Structure and Properties of Weld Joints on VT6S Alloy"

Moscow, Svarochnoye proizvodstvo, No 5, May 72, pp 8-10

Abstract: It is shown that electromagnetic stirring (EMS) of the weldpool in welding titanium alloys provides higher plastic properties of the weld metal while maintaining its strength properties through thinning and decreasing the linear structural dimensions of the α -phase, and reducing the intergranular inhomogeneity. A comparative microstructural analysis shows a marked distinction in both the shape and type of α -phase segregations. The structure of the α -phase in welds done without the use of EMS is characterized by the presence of roughly lamellar elongated colonies intersecting in some areas the boundaries of the parent grain. In welding with ESM, the α -phase has a slightly elongated fine-needle shape with dispersion decay signs typical of fine-grained metal. (3 illustrations, 2 tables, 2 bibliographic references)

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MALINNIKOV, V. V.

"Games Related with Problems of Linear Programming of a Special Type"

Teoriya Igr [Games Theory -- Collection of Works], Yerevan, 1973,
pp 233-235 (Translated from Referativnyy Zhurnal Kibernetika, No 10,
1973, Abstract No 10V458)

Translation: Games of n persons and the set of antagonistic games
arising upon study of a problem of linear programming of a special
form are studied. The relationship between optimal strategies in
games and the optimal solution of the problem is established. A de-
tailed presentation and proof are presented in RZhMat, 1969, 1V566.

Author's view

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--STRUCTURE OF CAST CARBON STEEL CONTAINING NIOBIUM --U--
AUTHOR--(03)--MALINCHKA, YA.N., KOVALCHUK, G.Z., BALAKINA, N.A.
COUNTRY OF INFO--USSR
SOURCE--METALLOVEDENIE [TERM. OBRABOT. METALLOV, 1970, (3), 58-59
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CARBON STEEL, CAST STEEL, NIOBIUM CONTAINING ALLOY, GRAIN
SIZE, CARBIDE, EUTECTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133016

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF TRACES OF NB ON THE STRUCTURE OF CAST C STEEL WAS STUDIED. THUS THE ADDITION OF NB REDUCED THE GRAIN SIZE, PREVENTED GRAIN GROWTH AT HIGH TEMP., AND RAISED THE SOFTENING TEMP. AND HEAT RESISTANCE. IN HYPOEUTECTOID STEELS CONTG. NB GREATER THAN 0.1PERCENT A CARBIDE EUTECTIC OF THE AUSTENITE-NBC TYPE FORMED BETWEEN THE BRANCHES OF THE DENDRITES. THE FORMATION OF THIS EUTECTIC WAS PARTICULARLY PROMOTED BY REDUCING THE COOLING RATE AND INCREASING THE C CONCENTRATION. THE PRACTICAL IMPORTANCE OF THIS AND RELATED EFFECTS IS CONSIDERED.

UNCLASSIFIED

USSR

MALINOV, A. V., Moscow

"Experimental Study of Natural Convection in Slot Cavities of Different Orientation"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 1, January-February 1971, pp 150-155

Abstract: In this paper the results of an experimental study of the phenomenon of natural convection in closed slot cavities are presented for the Rayleigh range $R = 3 \cdot 10^3 - 8 \cdot 10^4$ and a Prandtl number $P \approx 10^3$ -- glycerine. The variation in nature of flow in the cavity from Benard convection in horizontal cavities to boundary layer flow in vertical cavities is investigated, and a physical model of the observed phenomenon is proposed.

It is pointed out that a theoretical investigation of replacement of instability forms in slot cavities with arbitrary orientation with respect to the direction of the gravitational force by the method of small perturbations was performed by G. Z. Gershuni, Ye. M. Zhukhovitskiy, et al., and that they demonstrated that the transition from thermal instability to hydrodynamic instability on variation of orientation takes place continuously. The

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MALINOV, A. V., Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 1, January-February 1971, pp 150-155

experimental results presented in this paper confirm this conclusion.

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USSR

UDC 535.39+621.373:535].01

KURCHATOV, YU. A. and MALINOV, I. A.

"Reflection of a Multimodal Laser Beam From a Dielectric Interface"

Leningrad, Optika i Spektroskopiya, Vol XXXI, No 2, Aug '71, pp 283-287

Abstract: It is known that any arbitrary distribution of a monochromatic light in a beam may be broken down by types of oscillations, where each oscillation satisfies the wave equation $\nabla^2 u + k^2 u = 0$. Types of oscillations form a complete orthogonal system of functions. They are almost transverse and are characterized by two indexes which reflect the change in intensity in two orthogonal directions in a cross section of the beam. The authors studied the reflection from the plane interface of two dielectrics of a multimodal laser beam with a distribution of the following kind in each mode TEM_{mn} :

$$I = I_0 e^{-\frac{x^2+y^2}{\omega^2}} H_m^2\left(\frac{x\sqrt{2}}{\omega}\right) H_n^2\left(\frac{y\sqrt{2}}{\omega}\right),$$

where H_m and H_n are Hermite polynomials; $m, n = 0, 1, 2, \dots$ are the indexes of the type of oscillations; and ω is the radius of the beam. With the aid of integral Fourier transforms they obtained approximation expressions for the reflection coefficients. They found that modes $TEM_{m,n+1}$ and $TEM_{m,n-1}$ appear in 1/2

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KURCHATOV, YU. A. and MALINOV, I. A., Optika i Spektroskopiya, Vol XXXI, No 2, Aug 71, pp 283-287

the reflected beam. The amplitudes of these modes have an order of $1/\omega k$ if the amplitude of the mode TEM_{mn} is taken to be one. Furthermore, the energy coefficient of the reflection depends only slightly on the numbers of the modes when m and n are not very large.

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USSR

MALINOV, L. S., SOKOLOV, K. N., KOROTICH, I. K. and ZANNES, A. N.

"Influence of Alloying Elements and Heat Treatment on Hardening of Low-Nickel Martensite-Aging Steel"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 6, Nov-Dec 73, pp 24-26

Abstract: The study of low-nickel martensite-aging steels performed showed that they are a promising structural material with a good combination of mechanical properties. The best properties are those of steels types GOKh2N5hFYu and GOKh2N5hFDYu. The nature of hardening in the steels studied is similar to the hardening of high-nickel martensite-aging steels. It results from dispersion hardening of the carbon-free martensite. Softening of the steels is related to loss of the coherent bonding between intermetallides and the martensite matrix, coagulation of intermetallides and the processes of polygonization and recrystallization of the matrix.

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